PTC SOFTWARE PRODUCTS
LICENSING BASIS

Scope of this Document

This document sets out the licensing basis and restrictions for each of PTC's Licensed Products. In most cases, this document is incorporated into the legal documents governing the Customer's use of software licensed from PTC (collectively the "License Agreement"). In the event of inconsistency between this document and the PTC quote pursuant to which the Customer purchased the licenses (the "Quote"), the Quote shall govern. For example, this document may identify that a product is licensed in a particular way, but if the product name on the Quote specifies a different licensing basis, the Quote shall govern. PTC may update this document from time to time, but each purchase made by the Customer will be governed by the most current version of this document in effect at the time of the purchase.

This document does not include terms applicable to Success Plans. Success Plans are governed by the PTC Customer Success Plan Terms and Conditions located at https://www.ptc.com/en/documents/legal-agreements/support-documents.

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DESCRIPTION OF COMMON LICENSING BASES

"Concurrent User" (CU): Each Concurrent User product license may be used by one individual person at any given time.

Concurrent User products are generally "floating," except:

- <u>Designated Computer (DC)</u>: Where the product name contains the words "fixed," "locked," or "node-locked", and for all "Kepware" and "KepServerEx" products, such products are licensed to operate solely on the designated computer on which they are installed. It is not permitted to move Designated Computer licenses from one computer to another by means of installing such products on an external, portable or removable device (e.g., USB dongle, NAS, Router, memory stick, USB drive, external hard drive) or through other means.
- <u>License Locked (L)</u>: Where the part number contains the suffix "L", such products may only be used with another PTC product to which the product is an extension and the License Locked Product will assume the licensing basis of such other product.
- <u>Multiple Instances</u>: An individual using multiple instances of Concurrent User products at a particular time will in most cases consume that number of licenses. That is, for example, if a user opens two instances of Creo Elements/Direct, that user will be consuming two licenses, not one.

"Designated Server" (DS): Each Designated Server product may only be used on the computer server that is designated by the Customer in connection with the initial installation of the product and that has one unique instance of the applicable installed product application. In the event a computer server is partitioned in any manner (physically, logically or otherwise), the reference in the preceding sentence to "computer server" shall mean each partition of such server, and such Designated Server product may only be used on one of such partitions.

There is a variation of the Designated Server model referred to as "Designated Server (per CPU)". For these products, the license is limited to a server with only one central processing unit (CPU); an additional license is required for each additional CPU.

"Per Core" (PCO): For Per Core products, a license is required for each core of a processor within a system with which the applicable product is executed, as reported by the operating system running the applicable product. For example, if a device is executing PTC software that is licensed on a Per Core basis, assuming each device has two multi-core processors, each with two cores that all execute the software, four licenses would be required. Likewise, if the device had three single-core processors that all execute the software, three licenses would be required. If the operating system that runs the applicable product is within a virtual system (such as VMware) with two virtual cores allocated to the operating system running the applicable product, two licenses are required.

"Per Instance" (PI): For Per Instance products, one license is required for each instance of a system to which the applicable product connects. For example, if an adapter that is licensed on a Per Instance basis enables Windchill to connect to an ERP system and a CRM system, two licenses of such adapter will be required.

"Registered User" (RU): Registered User products may only be used by individual, named registered users on a password basis. The Customer may add and/or substitute from time to time new Registered Users as long as the aggregate number of Registered Users does not exceed at any point in time the number of licenses in effect at such time for that particular product and, provided further, that if a person who was previously a Registered User returns to Registered User status, a new license fee must be paid to PTC at PTC's then current rates. Note that, whereas Concurrent User products can only be accessed by users located in the "Designated Country" as defined below (unless they are "Global" or "Restricted Global" licenses), this restriction does not apply to Registered User products.

"Site License" (S): Products licensed on a "Site License" basis require a license for each Customer location at which such product will be used.

"Demo and Test": Products licensed on a "demo and test" or "non-production" basis (or similar designation), such Licensed Software may not be used in a production environment.

Packages (P): The licensing basis for each component of a PTC product package shall be the same as if such component were being licensed separately, except that the components of each package may only be used with the base seat in the package. For example, the Windchill PDMLink and Windchill ProjectLink Registered User Licenses bundled with the Creo Enterprise XE Package are Licensed on a Registered User basis and must be assigned in combination to a single Creo user.

Bundles (B): Each PTC Bundle contains several different PTC Licensed Products and the licensing basis for each such Licensed Product may differ from the other Licensed Products included in that Bundle. See below for the licensing basis of each component of a Bundle.

LICENSE RESTRICTIONS COMMON TO MULTIPLE PRODUCTS

Subscriptions: A "Subscription" is a License type that includes a License for a term as specified in the product name, Quote, order agreement or other order documentation, and/or the invoice, and such License includes Support Services during such License Term at no additional fee.

Virtualization Technologies: Although in some cases it may be possible through the use of virtualization technologies to circumvent the license control mechanisms that PTC employs in order to enforce the above licensing schemes, or to circumvent the intent of such licensing schemes, such practices violate the Customer's License Agreement with PTC. Without limiting the foregoing, Customers may not install or access Designated Computer licenses (also sometimes referred to as "node locked licenses") on or through virtualization technologies.

Third Party Terms: Various PTC products contain or consist of technology from third parties. See the Schedule of Third Party Terms (available at http://www.ptc.com/legal-agreements) for additional restrictions and terms that apply to such third party technology.

Upgrades: For PTC software licensed as an upgrade from a previous version, the Customer must first be licensed for the software identified by PTC as eligible for the upgrade and Customer must be active on Support Services for such software at the time Customer purchases the relevant upgrade. After installing the upgrade, the software licensed as an upgrade replaces and/or supplements the product that formed the basis of the Customer's eligibility for the upgrade and the Customer may no longer use the original software that formed the basis for the Customer's upgrade eligibility.

Interoperability Tools/Toolkits. PTC interoperability tools (e.g., Pro/TOOLKIT, or J-Link, Pro/Web.Link and application programming interfaces) are provided solely for purposes of enabling the Customer (itself or with the assistance of a third party) to cause the Licensed Products to interoperate with the Customer's other computer systems and programs. Customer shall not distribute to any third party all or any part of any such interoperability tool or use such interoperability tools to develop an integration for distribution to third parties. The foregoing does not apply to PTC's MKS toolkit.

Batching. For license types based on numbers of users (e.g., Registered User, Concurrent User, etc.), a License is required for each individual who accesses such Licensed Product or the functionality or data contained therein, whether directly or through a web portal or other mechanism for "batching" or otherwise achieving indirect access to the Licensed Product or such functionality or data. Generic or shared log-ins are not permitted.

Home Use Licenses/Portable License Enabler Licenses:

If the Customer's license is a "home use" license, such license is only for use within the home of an employee or contractor of the Customer who is a primary user of a separate non-home-use license of the same product. More information about home use entitlements and restrictions is located at http://www.ptc.com/legal-agreements/support-documents.

Windchill and Service Intelligence:

The following use restrictions apply to the Business Reporting functionality in Windchill and in the Service Intelligence Product, depending on the license type:

(i) Each license of Windchill includes a license to use the base Business Reporting functionality to: (a) select reports, view reports and set personal preferences (for languages, time zones etc.); and (b) run and schedule reports created by a person using Windchill Business Reporting Author, Service Intelligence Professional Author or Service Intelligence Advanced Business Author, or created by any of the means of report generation which are consistent with these use restrictions, interact with prompts, output the reports to other formats such as PDF and CSV, subscribe to a scheduled report, create and manage report folders and portal pages, personalize standard reports, and receive notifications, and (c) use the Business Insight to create interactive dashboards. One of these licenses may also be used for administration of the Business Reporting Software, with the additional permission to setup, deploy, configure and manage the Business Reporting software and components within the Customer's environment, use the Framework Manager to define and publish metadata, and in the case of Service Intelligence Administrators, to use Portal, Query Studio, Report Studio, Analysis Studio, Business Insight and Business Insight Advanced to author, publish, generate and view sophisticated and interactive reports, analysis, queries and dashboards.

(ii) A "Windchill Business Reporting Author" or "Service Intelligence Professional Author" license allows for the same functionality as clause (i) above, except that, in addition, the Customer may permit the specified number of Registered Users to use the Business Insight Advanced, Query Studio and Report Studio module and functionality and to model metadata via the Framework Manager.

(iii) A "Service Intelligence Advanced Business Author" license allows for the same functionality as clause (i) above, except that, in addition, the Customer may permit the specified number of Registered Users to use the Business Insight Advanced, Query Studio and Analysis Studio module and functionality and to model metadata via the Framework Manager.

(iv) A "Windchill Business Reporting Monitor" license means the Customer may permit the specified number of Registered Users to use the Event Studio module.

The Customer is required to configure the Business Reporting functionality to ensure that each user will be restricted from using any reporting functionality other than that licensed, as specified above. The Business Reporting functionality is only permitted to be used only with PTC products and not independent thereof.

GEOGRAPHICAL RESTRICTIONS ON INSTALLATION AND/OR USE OF PTC PRODUCTS

<u>Restriction on Installation Location</u>. Except for "Global" licenses (as specified in the product name), all of PTC's products are restricted such that they may only be installed in the country of purchase (referred to in the License Agreement as the "Designated Country"). Where Customer desires to change the country of installation, Customer is required to notify PTC and, where the list prices for such licenses are higher in the proposed new country of installation, uplift fees are required based on the difference.

<u>Restrictions on User Location (Concurrent User Products)</u>. Except for "Global" and "Restricted Global" licenses, PTC products that are licensed on a Concurrent User basis may only be used by persons physically located in the country where the products are installed, and all of the software components shipped as part of that product (for example, client code and license server) may only be installed in the Designated Country. However, where a person who is normally located in that country is traveling abroad, that person can "borrow" the license for a limited period of time (for most products two weeks), during which time period such license is not available on Customer's network. Users who are not employees of the Customer may use PTC products licensed on a Concurrent User basis only while physically located at a Customer site. **THE RESTRICTIONS IN THIS PARAGRAPH APPLY ONLY TO CONCURRENT USER PRODUCTS, NOT TO PTC PRODUCTS THAT ARE LICENSED ON A DIFFERENT BASIS THAN CONCURRENT USER.**

<u>Global/Restricted Global Licenses</u>.

<u>Global Licenses</u>. A "Global" License allows the Customer to install, operate and use such Licensed Product at any of the Customer's site(s) throughout the world, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation, but subject to compliance with all applicable export laws and regulations.

<u>Restricted Global Licenses</u>. A "Restricted Global" License allows the Customer to install, operate and use such Licensed Product at any of the Customer's site(s) located in the Designated Country and/or in any Permitted Country, notwithstanding any restrictions in the License Agreement in relation to limiting use of Licensed Products to the country of installation. "Permitted Countries" means China, India, Russia, the Czech Republic, Poland, Hungary, Malaysia, South Africa, Israel, Mexico, Brazil, Argentina, and Romania.

LICENSING BASIS TABLES

Creo and Other PTC MCAD and Simulation Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Creo Family of Products (except as noted)	Concurrent User	Creo Elements/Direct Family of Products (except as noted)	Concurrent User
Creo Extensions	Concurrent User or Designated Computer (as designated in the part number)	Creo Elements/Direct Modeling Personal Edition	Registered User (except that, after this Licensed Product is assigned to a Registered User, the License may not be re-assigned to any other user even if the original Registered User ceases to be employed by the Customer)
Creo Application Programming Toolkit	Registered User	Oracle DB Standard Edition 2	Registered User (1)
Creo View	Registered User or Concurrent User	Creo CADDS	Concurrent User
Creo View Adapters	Designated Server or Registered User	Rights Management User Licenses	Registered User
Creo View Toolkits	Per Instance	Creo View Express	See note (2) below
SD/Fast	Designated Computer	Creo Illustrate	Concurrent User, unless the product name includes: (i) "Locked", in which case it is Designated Computer, or (ii) "Registered User", in which case it is Registered User, or "Add On", in which case it is License Locked.

(1) Oracle DB Standard Edition 2: Oracle DB Standard Edition 2 may not be installed on servers with more than two sockets. In addition, each Oracle Database Standard Edition 2 database may use a maximum of sixteen CPU threads at any time. In addition, the minimums are five licenses per server.

 (2) Creo View Express: PTC makes Creo View Express available for download free of charge on www.ptc.com. Notwithstanding anything to the contrary in the License Agreement, Customer may embed Creo View Express in products Customer makes available to its customers and thereby distribute Creo View Express to such customers.

PTC Mathcad Products

Licensed Product Name	Licensing Basis
PTC Mathcad	Concurrent User or Designated Computer, based on the name of the product and/or as shown on the PTC Quote Student Edition is always Registered User and notwithstanding anything to the contrary elsewhere in this document, may not be re-assigned to any other user even if the original Registered User ceases to use the product. Mathcad Express is limited to usage for personal purposes, and may not be used to benefit any business or for any commercial purposes or for any business purposes.
Mathcad Server	This product is licensed on a Designated Server basis, and is not limited to a specified number of submissions to the server for calculation per subscription year. Each license of Mathcad Server includes three Concurrent User licenses of PTC Mathcad - one for production, one for test, and one for development. The development license may also be used for worksheet authoring purposes. The other two are to be used to run Mathcad Server in production and in test, and cannot be used for worksheet authoring purposes.

Arbortext Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Arbortext Family of Products	Concurrent User (except as noted below)	Arbortext Provisioning Transaction Manager	Concurrent User
Arbortext Publishing Engine	Designated Server (per CPU)	Arbortext Learning Content Manager - S1000D	Designated Server
Arbortext Content Manager	Registered User	Arbortext IsoView Distribution Kit	Site License **(1)**
Arbortext IETP Viewer - S1000D	Designated Server (per CPU)	Arbortext Layout Developer – Enterprise	Designated Computer, Designated Server or per CPU, as specified in the product name
Arbortext LSA Interface	Designated Server	Arbortext CSDB - S1000D	Concurrent User
Arbortext Content Delivery (a/k/a InService)	Base license is required per deployment of the Arbortext Content Delivery system. Also, a Viewer license is required for each user on a Concurrent User basis in excess of the user licenses provided as part of the base license. Alternatively, a Site Access license can be purchased, which allows for unlimited users on the Arbortext Content Delivery system deployment.	Web Access/Expert Users	Registered User

 (1) <u>Arbortext IsoView Distribution Kit</u>: Notwithstanding anything to the contrary in the License Agreement, a Distribution Kit License of the Arbortext IsoView Licensed Product permits the Customer to: (i) use Arbortext IsoView in a single building or group of buildings that share a common physical address to develop Interactive Electronic Technical Manuals ("IETM") or a software application that must have significant additional functionality to the functionality of the Licensed Products and/or significant additional and primary content (e.g., an IETM) ("Application"), and (ii) sublicense to Customer's end-users, without the right to further sublicense and subject to the terms of this paragraph, the applicable installation program files and included runtime components, as bundled in an IETM or other significant content or

an Application, solely for use in connection with such IETM/significant content or Application. The right to sublicense Customer's end-users shall not apply unless an Application has significant additional functionality and significant additional and primary content. If Customer installs such installation program files on Customer's webpage(s) for presentation of illustrations such installation programs files must be protected by requiring the use of a restricted password. Any such sublicense may only be granted to Customer's end users who agree to abide by all of the terms and conditions of the License Agreement with respect to such use. Customer shall not remove any proprietary notices or labels contained in the Arbortext IsoView Licensed Products and shall include a valid copyright notice with each copy of the IETM and Application. If Customer uses or distributes runtime components or their copies as part of the Arbortext IsoView installation files, Customer shall indemnify and hold PTC and Microsoft Corporation harmless from all and any claims caused by this distribution and use by its end-users.

SLM/Servigistics Products

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Third Party Products (1) Informatica Intellicus Navteq Google Maps	Each license entitles Customer to use Informatica on up to 8 cores Designated Server or Concurrent Report Limited (2) Registered User Unlimited geo-coding and 250,000 annual page views	Service Knowledge and Diagnostics • Servigistics Service Knowledge and Diagnostics - includes 5 Advisor Studio and 5 Advisor for Analytics* • Servigistics Advisor for Self Service - B2C • Servigistics Advisor for Contact Center • Servigistics Advisor for Field Service • Servigistics Advisor Offline • Servigistics Advisor for Analytics - 5 Pack • Servigistics Advisor Studio • Servigistics Advisor Service Session for Call Center • Servigistics Advisor Service Session for Field Service * For Subscription offerings, Servigistics Advisor Studio and Advisor for Analytics are included in the Site License	Package Site License Registered User
Field Service Management	All Registered User, except for the base package, which is Site License		

The Service Parts Management family of products are licensed based on the following two models

1. If the Quote specifies "PMI" as the licensing basis for this product, in such case the license is limited by the value of inventory that is included in the software (using the values assigned by the Customer as specified in the software and consistent with the values of such inventory as stated in the company's audited financial systems) as of the date the software is first implemented for or by Customer (the "Baseline Value"). It is sold in blocks of US$1 million (or such other currency as may be specified in the Quote), with each quantity unit ordered representing US$1 million of Customer inventory. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents. Customer will be required from time to time upon request to inform PTC of the value of the inventory included in the software. All parts, at all locations (parts times locations) input to the SPM system is considered inventory (e.g., forecasted, optimized, supply/demand planned, repaired, balanced, etc) regardless of the condition of the inventory (e.g., on hand new, on hand fixed, on hand bad, on order, in return, in repair). If the value of the inventory managed in the software drops below the Baseline Value, Customer shall nonetheless be required to license at least the Baseline Value. If the value of the inventory managed increases above the Baseline Value, Customer shall be required to license the excess amount. In the event Customer acquires other businesses and desires to manage the inventory of such other businesses using the software, Customer shall notify PTC of such fact and the parties shall negotiate in good faith an increase to the Baseline Value (and corresponding fees).

2. If the Quote refers to "PXL" as the licensing basis for a product, the calculation of the number of PXLs required shall be determined by multiplying the number of part numbers in the software times the number of locations in the software as of the date the software is first implemented for or by Customer (the "Baseline Value"). For example, without limiting the foregoing, if Customer includes in the software 10,000 part numbers and 4 locations, Customer will be managing 40,000 "PXLs" and would need to purchase a quantity of at least 40,000 PXLs. If the number of PXLs in the software drops below the Baseline Value, Customer shall nonetheless be required to license at least the Baseline Value. If the number of PXLs in the software increases above the Baseline Value, Customer shall be required to license the excess amount. In the event Customer acquires other businesses and desires to manage the inventory of such other businesses using the software, Customer shall notify PTC of such fact and the parties shall negotiate in good faith an increase to the Baseline Value (and corresponding fees).

Service Parts Pricing is licensed based on the annual Customer revenue from the sale of service parts that are being managed by the software. It is sold in blocks of US$1 million (or such other currency as may be specified in the Quote), with each quantity unit representing US$1 million of annual Customer revenue. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents. Customer will be required from time to time upon request to inform PTC of the annual revenue from the inventory included in the software. Additional restrictions (e.g., geographic, divisional, etc.) may be specified in the order documents.

Service Network Management family of products

Perpetual licenses for this family of products are licensed based on the number of locations (Customer or third party) where inventory is stored that is included in the Licensed Product. The "Foundation" license includes 25 locations. Additional locations can be added by "additional location" licenses.

Subscription licenses for this family of products are licensed based on PMI (as described above).

Warranty & Contract Management	Designated Server **(4)**	Service Center	Designated Server
Warranty Analytics **(3)**	Registered User **(4)**	iService	Concurrent User
Warranty products	Concurrent User **(4)**	iSupport	Concurrent User
Warranty Web Access	Designated Server **(4)**	iParts	Concurrent User
Warranty Registration	Designated Server **(4)**		

(1)   The Servigistics third party products are subject to restrictions and terms and conditions that PTC is required to flow down to Customer, as set forth on the PTC Schedule of Third Party Terms available at http://www.ptc.com/legal-agreements. PTC hereby assigns to Customer all assignable warranties and indemnities granted to PTC by the third party providers of the applicable third party products as set out in such third party terms.

(2) "Concurrent Report Limited" means that the Product is limited in how many reports can be generated at a given time. Thus, for example, if Customer purchases a "5-Pack" of this Product, only five reports can be generated at any given time.

(3) The Service Intelligence bundle includes 1 Administrator, 2 Advanced Business Authors and 1 Professional Author. Note that additional Advanced Business Authors can also be purchased under this product name.

(4) See page 3 of this document for additional terms relating to the Service Intelligence functionality in PTC's Warranty products.

Windchill Products (1) (7) (8)

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Windchill Family of Products (except as noted)	Registered User	Windchill FRACAS, FMEA, FTA, Markov, Maintainability, LCCs, and Prediction	Concurrent User
Windchill Enterprise Systems Integration (except as noted)	Designated Server	Windchill FlexPLM	Registered User **(2)**
Windchill Enterprise Systems Integration Adapters	Per Instance **(4)**	PTC's Retail IoT ADK (Application Developer Kit)	Registered User **(3)**
Windchill Info*Engine Adapters	Per Instance	Windchill Platform Structures	Active Daily User (ADU) **(6)**
UDI Solution	UDI **(5)**	Windchill R&R ALERT, R&R AUDIT, and R&R PLM Integration	Designated Server

(1) <u>Integrations</u>. If the Customer creates an interface or otherwise enables real time or automated access between a Windchill implementation and a system of non-PTC software, all users in the Windchill system must have either a ThingWorx Navigate View, ThingWorx Navigate Contribute, Windchill Base, Windchill Advanced, or Windchill Premium license.

(2) <u>Windchill FlexPLM</u>

FlexPLM "Light User" licenses may only be assigned to users who do not have substantial duties within the following organizations or functional areas within the Customer's organization: System Administrators, Technical Designer, Designer, Fabric Development, Color Development, Fit Specialist, Merchandising, Product Quality, and Sourcing ("Light Users"). The Customer may not assign (or reassign) Light User licenses to persons who are not Light Users unless and until Customer pays the applicable upgrade fee(s) for software and Support Services.

FlexPLM "Supplier Licenses" or "External User Capacity" licenses may be assigned only to users who are vendors, third parties and others external to the Customer and its affiliates ("External Users"). External User licenses may be reassigned to another External User at no additional license fee, except that an External User license may not be used by more than one External User during any calendar month.

Registered Users of FlexPLM also receive entitlements to use certain role-based applications (e.g., the FlexPLM TechPack Access App). These applications are limited to use by Registered Users of FlexPLM and may only be used for the following purposes:

1. to execute applications to view and print information from solutions sold by PTC and delivered through the components bundled with the role-based applications.
2. to install the ThingWorx server for the sole purposes of accessing FlexPLM data as applicable to the role-based applications and configuring details required for the role-based applications.

If the Customer creates (or engages a third party to create) an integration between a production FlexPLM system and a system of non-PTC software or otherwise enables data to be passed between a production FlexPLM system and a system of non-PTC software, then the Customer must purchase the ThingWorx Retail Connector (SPN-2253-F). The ThingWorx Retail Connector (SPN-2253-F) provides integration of FlexPLM to one (and only one) system of non-PTC software and includes the right to install the ThingWorx OEM Embedded License for Apps (SPN-56283-F) for the sole purpose of enabling the integration of FlexPLM and one system of non-PTC software. No other use of ThingWorx is permitted. The TRC Additional System Connection (SPN-2254-F) authorizes the use of the ThingWorx Retail Connector to integrate FlexPLM with one additional system of non-PTC software, beyond that included through the licensing of SPN-2253-F as defined above. There is no limit to the number of licenses of SPN-2254-F that can be acquired once SPN-2253-F is licensed.

There are also the following FlexPLM offerings that are specific to the consumer products industry. For each offering, only the functionality listed below may be used.

- **FlexPLM for Consumer Products – Line Management**: This offering enables collaboration between marketing / product management user roles and design / development / engineering teams by providing abilities to manage product line plans and communicate these plans to others. The specific features that may be used in this offering are:
  - Plan and placeholder management
  - Color, finish, and palette management
  - Ability to create & manage products and SKUs

- Image management
- Line board creation
- Season or program management
- Calendar management

- **FlexPLM for Consumer Products – Product Spec Management**: This offering enables design, development, and engineering teams to manage information relevant to a product's specifications. The specific features that may be used in this offering are:
    - CAD and Windchill Part associations to Products
    - Materials definition and management
    - Supplier management
    - Specificaion management - including BOMs and Packaging and Labeling

- **FlexPLM for Consumer Products – Sourcing and Costing Management**: This offering provides the ability to assign suppliers as finished goods manufacturers and derive finished goods costs for cost and margin analysis. The specific features that may be used in this offering are:
    - Product sourcing
    - Product costing – including RFQ and commitment management
    - Product testing
    - Supplier scorecards

(3) <u>ADK</u>. PTC's Retail IoT ADK (Application Developer Kit) product may be used by Customer only to connect to PTC's FlexPLM product to other enterprise systems (e.g., Oracle ERP, SAP, CRM systems, etc.). It may not be used to access data from devices – which can include but is not limited to connected products, wearables, production machinery, and physical assets – and any edge servers or services that devices are connected to. It also may not be used to connect to manufacturing systems, processes, and/or operations belonging to the Customer's internal production facilities or the Customer's suppliers' production facilities.

(4) <u>ESI</u>. Each Windchill product which includes "Enterprise Systems Integration" or "ESI" in the name of the product includes one instance of ESI. Customer may purchase additional instances of ESI separately, including licenses for non-production and development use.

(5) <u>UDI Solution</u>. For PTC's UDI Solution, two different licenses are required – core system licenses and agency submittal licenses:
- Core system licenses enable management, replication and approval of UDI data.
- Agency submittal licenses enable UDI regulation compliant submission, as well as submission retention and monitoring and auditing capabilities, and also include user training specific to UDI usage.

Each UDI license covers up to the number of Devices indicated in the product name. Thus, for example, without limiting the foregoing, if Customer has 30,000 actively-marketed Devices registered with the U.S. FDA and 10,000 actively-marketed Devices registered with the UK Medicines and Healthcare products Regulatory Agency, then in that case:
- If all 10,000 Devices registered with the in the UK are a subset of the 30,000 registered in the U.S., Customer would need 3 "10,000 Device" core system licenses and 16 "2,500 Device" agency licenses (12 for the U.S. FDA and 4 for the UK Medicines and Healthcare products Regulatory Agency) (assuming the 10,000 Devices registered).
- If there is no overlap, then Customer would need 4 licenses of the core system and 16 of the agency licenses.

A "Device" means a product make or model that Customer has registered with any regulatory agency and that is being actively marketed by Customer.

(6) <u>Windchill Platform Structures</u>. "Active Daily User" means that the product is licensed on the basis of the number of unique users who access Platform Structures content at any time during a 24 hour calendar day. For example, if a user accesses Platform Structures content 3 times on a Monday and 2 times on the following Friday, then the user is counted as a single active user on both Monday and Friday only. The 24 hour period is defined using the time zone set for the connected Windchill server. Platform Structures content is defined as any content that includes configurable parts.

(7) <u>Windchill Profiles</u>. Various Windchill products are role-based (e.g., "author", "contributor", etc.). Different roles are entitled to use different functionality in such products, and it is necessary for the Customer's Windchill administrator to assign users to the correct roles corresponding to the licenses purchased by the Customer.

(8) <u>Enterprise PLM Packages and Enterprise Add-On Applications</u>: The pre-requisites for the Enterprise PLM Add-On Applications are as follows:

License	Pre-requisite(s)
Windchill Creo Data Management and Visualization Windchill Multi-MCAD Data Management and Visualization Essentials Windchill Multi-MCAD Data Management and Visualization PTC Windchill Audit Management Windchill QMS - Document Control Windchill QMS - Med Dev Surveillance and Corrective Action	Windchill Base, Windchill Advanced, or Windchill Premium
Windchill Service Parts Information & Instructions Windchill QMS - Medical Device Design Control PTC UDI Solution Windchill Regulatory Hub	Windchill Advanced or Windchill Premium
Windchill Base-to-Advanced Add-on	Windchill Base
Windchill xBOM Management	Windchill Advanced
Windchill Manufacturing Process Plans and Instructions	Windchill Advanced plus Windchill xBOM Management; or Windchill Premium
Windchill Supplier Management	Supplier Management must be added to all Windchill Advanced users in the Windchill system if Supplier Management is implemented.
Windchill Part Classification	Parts Classification must be added to all Windchill Base and Windchill Advanced users in the Windchill system if Parts Classification is implemented.
Windchill Secure Collaboration	Secure Collaboration must be added to all Windchill Base users in the Windchill system if Secure Collaboration is implemented
Windchill Aerospace & Defefense Module	Windchill Aerospace & Defense Module must be added to all Windchill Base, Windchill Advanced, and Windchill Premium users in the Windchill system if the Aerospace & Defefense Module is implemented.
Windchill Platform Structures Management" ADU license	ThingWorx Navigate View, ThingWorx Navigate Contribute, Windchill Base, Windchill Advanced, or Windchill Premium. The PTC Windchill Platform Structure ADU license must be available for any user (Authoring or Viewing) participating in programs using configurable parts when they access Platform Structures content.

Windchill Systems and Software Engineering Products (1)

Licensed Product Name	Licensing Basis	Licensed Product Name	Licensing Basis
Model Based Systems Engineering	Concurrent User	Requirements Connector	Concurrent User
Software Modeling	Concurrent User	Modeler	Concurrent User
MBSE Code Generator Add-on	Concurrent User	Asset Library	Concurrent User
Process Director	Concurrent User	Lifecycle Manager	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses
Process Consumer	Concurrent User		
Process Check	Concurrent User		
Requirements and Validation	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses [2]	Source Code Management (previously GSD)	Registered User or Concurrent User (as specified in the product name), except that for the Concurrent User version, each Concurrent User license entitles Customer to four Registered User eLearning licenses [3]

(1) Notwithstanding anything to the contrary in the License Agreement, (a) use of Windchill Systems and Software Engineering software is not restricted to persons located in the Designated Country and (b) for the Registered User version of these licenses Customer may not substitute one Registered User for another, except that a Registered User who ceases to be employed by Customer or who permanently ceases to use the license may be replaced with another Registered User.

(2) Requirements and Validation – Limitations of Use

The Requirements and Validation license allows users to use only the following functionality:
- Lifecycle Manager:
  - Management and change of requirements and specifications
  - Management and change of test cases, steps, sessions, and results
  - Baseline, review and approval processes for requirements, specifications, and tests
  - Validation and verification of requirements, as understood by traditional industry practices
  - Administer system configuration, delivery, and deployment
- Requirements Connector:
  - Exchange requirements between Lifecycle Manager and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
  - Administer system configuration, delivery, and deployment

Users are not allowed to use any functionality not listed above. For example, without limitation, the following functionality is not authorized to be used:
- Lifecycle Manager:
  - Software change configuration management
  - Software build management
  - Issue or defect management
  - Agile or other software process management offerings
- Requirements Connector:
  - Exchange requirements between IBM Rational and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
- Windchill integration:
  - Any offerings related to Windchill Integrations to Embedded Software
  - Any integrations related to software (source code, build artifacts) or BOM configurations
  - Any related change management processes between Windchill and Lifecycle Manager

The Customer's system administrator is responsible for configuring the above software so that only the included functionality is visible/accessible to the user. Instructions for such configuration are provided by PTC.

(3) Source Code Management (previously GSD) – Limitations of Use

Source Code Management includes functionality of the Requirements Connector product, users are only authorized to use the following Requirements Connector functionality:

- Requirements Connector:
  - Exchange requirements between Lifecycle Manager and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)
  - Administer system configuration, delivery, and deployment

Users are not authorized to use the following functionality of Requirements Connector:

- Requirements Connector:
  - Exchange requirements between IBM Rational and IBM Rational DOORs or standard file exchange format (ReqIF and RIF)

ThingWorx Core Products

PTC has the following licensing models for ThingWorx core products: (i) the ThingWorx Legacy Model, (ii) the ThingWorx Smart Connected Products model, (iii) the ThingWorx Smart Connected Operations model, and (iv) the ThingWorx OEM Program. Each of these licensing models is described below. Except under the ThingWorx OEM Program, under all of the other models, it is not permitted to: (a) use the ThingWorx Licensed Products in order to develop applications that Customer makes available for use by third parties (except under the ThingWorx SCP model to make Customer's physical products internet-enabled), or (b) allow the Customer's customers to install the Licensed Products either on such customers' premises or at third party premises for such customers.

"ThingWorx Active-Active Cluster" capability was released with ThingWorx 9.0. ThingWorx Active-Active Clusters allows customers to "pool" together multiple servers (nodes) in a cluster by sharing the combined resources of the clustered servers. This "ThingWorx Active-Active Cluster" feature allows customers to horizontally scale ThingWorx by sharing computing resources and/or to create redundancy by configuring the multiple servers to be mirror-images of each other across a shared database environment.

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ThingWorx Legacy Model

The ThingWorx Legacy Model refers to the licensing schemes employed by PTC prior to adoption of the other models. These products, to the extent they are still available for purchase in the PTC price list, are only available for add-on purchases, meaning that the Customer must already own licenses of these products in order to purchase additional copies. The licensing of these legacy products will be the same as the licensing of the same products when previously purchased most recently by Customer.

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ThingWorx Smart Connected Products ("ThingWorx SCP")

The ThingWorx SCP model allows Customers to license the IoT Platform for connecting Customer's products and for building and running IoT applications. The licensing basis for each Licensed Product in the ThingWorx SCP model is detailed in the table below:

Licensed Product Name	Licensing Basis
ThingWorx SCP Platform Edition (1)	SCP
SCP Named Users (2)	IoT
Assets (3)	IoT
ThingWorx Analytics (4)	Per Core
Software Content Management	License required for each Production Instance (as defined below in note 1 below)
Additional Production Limited Instance (5)	SCP
SCP Runtime App (6)	SCP

(1) There are different ThingWorx SCP Platform "Editions": Premium Edition, Professional Edition, and Enterprise Edition. Each ThingWorx SCP Platform Edition includes one Instance for production usage and an unlimited number of Instances for non-production use only (except where PTC is hosting the Licensed Products for Customer, in which case the entitlement is one non-production Instance, unless additional hosted non-production environments are purchased). Each ThingWorx SCP Platform Edition includes a designated number of SCP Named Users, Assets, and ThingWorx SCP Platform Edition-specific features as set forth in the table below. The ThingWorx SCP Platform can be installed on the Customer's physical premises or at the Customer's designated hosting provider, if not hosted by PTC. An "Instance" means a dedicated deployment of application servers in a ThingWorx Active-Active Cluster, all of which are located in one physical location and a shared database. Each ThingWorx SCP Platform Edition includes the "ThingWorx agents" or "Edge Microservers" and a ThingWorx SDK used by the Customer to add connectivity into the Customer's run-time applications. The "ThingWorx agents," "Edge Microservers," and Customer's applications created with a ThingWorx SDK are unlimited and distributable with connected products, but only for use with ThingWorx products.

	Premium Edition	Professional Edition	Enterprise Edition
Assets (included)	50	75	100
SCP Named Users (included, more may be purchased separately)	5	5	5
View-Only SCP Users	Included	Included	Included
ThingWorx Analytics	Not available	8 cores included	16 cores included
eLearning (Registered Users)	1 license included with each SCP Named User		

ThingWorx Foundation	Included	Included	Included
Technical Support	Silver	Gold	Gold+
Software Content Management	Not available	Not included	Included
ThingWorx Flow	Included	Included	Included
ThingWorx Active-Active Clustering	Included (9.0+)	Included (9.0+)	Included (9.0+)
Asset Advisor	Included	Included	Included

(2) "SCP Named User" (designated as "IoT") means a log-in ID that enables access to the ThingWorx Platform directly or via an intermediate application for use by a person who is authorized by the system administrator to develop mashups, applications and/or dashboards using the Licensed Product. This licensing basis is a variant of the Registered User licensing basis. Users are counted on an individual basis, not on a concurrent basis.

"View-Only SCP Users" are users of the Licensed Product that are authorized only to consume outputs from the ThingWorx Platform. View-Only SCP Users may not be authorized to, and must not, develop or modify mashups, applications or dashboards. View-Only SCP Users may have a log-in, or might be someone (e.g., a service desk employee) who accesses data through another system or through a shared log-in or screen. View-Only SCP Users are unlimited and included with the ThingWorx SCP Platform.

(3) "Asset" (designated as "IoT") (also sometimes referred to in the product itself or elsewhere as a "Device" or a "Thing" or a "Remote Thing") means a sensor, device, machine, system, web service, etc. that is modeled (represented) and/or registered as an asset (or "device" or "thing" within the Licensed Product) or any separately defined part of the foregoing if it is being treated as a separate asset within the software. For example, without limitation, an Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if modeled or registered as a separate asset in the software), etc.

"Simple Narrow Band Asset" (NB) is a class of Asset (SCP section 3) that runs on either an industry standard Low Power Wide Area Network (LPWAN) or 5G network with the following additional constraints: No remote access from ThingWorx into the asset, No Software Content Management (SCM) capability, and no file transfer capability.

(4) "ThingWorx Analytics" enables machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics may be licensed for use in conjunction with the ThingWorx SCP Platform Professional and Enterprise Editions, only. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license.

Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

(5) The Additional Production Limited Instance allows a Customer to deploy an Instance on multiple servers with a corresponding shared database that are not located at one physical location. A license of the Additional Production Limited Instance is required for each such non-collocated server. Where there are multiple databases, however, an additional SCP Platform Edition must be purchased for each such Instance.

(6) "SCP Run-time license" is a ThingWorx Platform license that enables a customer to run their application or solution on a remote device. This Rintime License enables the customer's application or solution to work remotely, but restricts further development in the field.

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ThingWorx Smart Connected Operations ("ThingWorx SCO")

The ThingWorx SCO models allow Customers to license the IoT Platform for connecting and monitoring Customer's internal manufacturing systems, processes, and/or operations related to the production of Customer products. There are several SCO Solutions models, which are based primarily on solutions/use cases sold per Site, plus SCO Named Users and in some cases assets. There is also an SCO legacy pricing model which is primarily based on editions per Site, plus SCO Named Users. Each model includes the "ThingWorx agents" or "Edge Microservers" and a ThingWorx SDK used by the Customer to add connectivity into the applications. The "ThingWorx agents," "Edge Microservers," and Customer Applications created with a ThingWorx SDK may be used only with ThingWorx Assets.

Definitions Applicable to SCO Solutions Models

- An "Application Production User Interface" is the point at which the human end-user interacts with a computer, website, or application, in a single unified screen. Every unique combination of user interface elements, components, mashups etc., is considered its own single Application Production User Interface. The application may be made up of several Application Production User Interfaces, linked together to solve a business problem.
- "Connected Asset" is production equipment (assets) used by Customer to produce and deliver materials during the manufacturing process. The asset may include one or multiple sensors, devices, machines, system, web service, etc. that are represented (modeled or configured) as an asset (or "device" or "thing"). For example, without limitation, a Connected Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if represented (modeled or configured) as a separate asset in the software. Connected Asset licenses are required in Process Manufacturing for any Connected Assets that are represented or visualized in the Licensed Product.
- A "Custom Application" is a software application not created by PTC that has been built for a single business use case for end users, addressing the Customer's needs and requirements. A Custom Application is developed using the ThingWorx platform technology and made up of a combination of backend components, services, mashups, and up to 10 Application Production User Interfaces per Custom Application. Any Custom Applications requiring more than 10 Application Production User Interfaces will require the purchase of a second Custom Application license.
- "Process Manufacturing" is manufacturing that mixes or combines ingredients utilizing a recipe, blend, or formula to create a chemical, physical or compositional change resulting in finished goods (indistinct units). The materials that make the finished product are typically in varying units of measurement, and can be transformed (e.g., gas, liquid, oil, powder) into a final product which cannot be taken apart into its original forms. Process manufacturing relies on the flow of sequential steps, with the completion of one step leading to the start of the next step. Examples include, without limitation, the manufacturing of food items, beverages, chemicals, pharmaceuticals, plastics, and oil & gas. Examples of manufacturing that is not process manufacturing include, without limitation, the manufacturing of things such as turbines, furniture, appliances, cars, nuts, bolts, smart phones, and generators.
- "SCO Named User" means a person who accesses the ThingWorx Platform directly (when sold with SCO Solutions Premium or SCO Solutions Enterprise) or via an intermediate application (when sold with Digital Performance Management or SCO Use Case).
- A "Site" means a customer building or set of connected buildings where the software is being used.

Standalone Model – The SCO Standalone model permits Customers to use ThingWorx only in connection with PTC-provided SCO or service applications, and without limitation does not permit Customers to use ThingWorx to modify a PTC-provided application or to develop Custom Applications. The licensing basis for PTC's SCO Standalone model entails a fee per Site where the application will be deployed. Furthermore, fees are required for each SCO Named User over 25 users, and for Process Manufacturing, a fee is also required per Connected Asset.

SCO Solutions Premium Model - PTC's SCO Solutions Premium model permits Customer to use ThingWorx to develop Custom Applications for SCO purposes. The licensing basis for PTC's SCO Solutions Premium model entails a fee for use of the ThingWorx Platform, and this fee will allow the Customer to deploy one application at one Site. An additional fee will be required for each additional application and each additional Site where such application(s) are deployed. So for example, without limitation, if Customer deploys two applications at two Sites, four licenses will be required. Furthermore, fees are required for each SCO Named User over 25 users, and for Process Manufacturing, a fee is also required per Connected Asset. The SCO Solutions Premium model comes with the entitlements specified in the table below.

SCO Solutions Enterprise Model - PTC's SCO Solutions Enterprise model permits Customer to use ThingWorx to develop Custom Applications for SCO purposes. The licensing basis for PTC's SCO Solutions Enterprise model entails a fee for use of the ThingWorx Platform,and this fee will allow the Customer to deploy an unlimited number of applications at one site. An additional fee will be required for each additional Site where such application(s) are deployed. So for example, without limitation, if Customer deploys five applications at three Sites, three Site licenses will be required. Furthermore, fees are required for each SCO Named User over 100 users per Site, and for Process Manufacturing, a fee is also required per Connected Asset. The SCO Solutions Enterprise model comes with the entitlements specified in the table below.

Digital Performance Management – Digital Performance Management (DPM) is a PTC-provided application that can be purchased by Customer in connection with any of the SCO Solutions models specified above. Customer may edit the mashups provided with the out-of-the-box DPM solution, but is prohibited from creating new mashups (either directly or by excessively editing the existing mashups). Customer may integrate DPM with other systems but only for read-only purposes. Customer may

access ThingWorx only to configure Kepware tags for connectivity, and for no other purposes. The DPM model comes with the entitlements specified in the table below.

	SCO Solutions Premium Platform	SCO Use Case Application	SCO Solutions Enterprise Model	Digital Performance Management
Prerequisite	N/A	SCO Solutions Premium Platform or PTC Services Application	N/A	N/A
SCO Named Users (included, more may be purchased separately)	5 (only for administrative use purposes and not to access the SCO Use Case Application)	25	100 per Site included	25 per Site included
Connected Assets	Purchased separately. Only required if license is for use in Process Manufacturing.			
Custom Application included	0	1 (includes up to 10 Application Production User Interfaces)	Unlimited number of Custom Applications may be created	0
ThingWorx Runtime License	N/A	1 per Custom Application per Site	1 per Site included	1 per Site included
ThingWorx Foundation	1 per contract			
ThingWorx Digital Performance Management	Not included		Access to Digital Performance Management license (1 per Site) included in the bundle	Included
ThingWorx Analytics	Included (32 cores)		Included (64 cores)	Included (32 cores)
ThingWorx Manufacturing Apps	Included		Included	Not included
ThingWorx Kepware Server	0	5 ThingWorx Kepware Server Manufacturing Suite (Designated Server)	40 ThingWorx Kepware Server Manufacturing Suite (Designated Server)	
eLearning (Registered Users)	1 per SCO Named User			
Technical Support	Gold included (Gold+ may be purchased as an upgrade)		Gold Plus	
Software Content Management	Purchased separately			
ThingWorx Flow	Included			Purchased Separately
ThingWorx Active-Active Clustering	Included			Used by the supporting ThingWorx Platform

ThingWorx Analytics - The ThingWorx Analytics software referenced in the tables above enable machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license. Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

SCO Solutions Legacy Model

The licensing basis for each Licensed Product in the ThingWorx SCO Legacy model is detailed in the table below:

Licensed Product Name	Licensing Basis
ThingWorx SCO Platform Edition (1) (2)	SCO
SCO Named Users (4)	IoT
ThingWorx Manufacturing Apps (3)	MA
ThingWorx Analytics (5)	Per Core
Software Content Management	License required for each Production Instance (as defined below in note 1 below)

(1) There are different ThingWorx SCO Platform "Editions": Standard Edition, Premium Edition and Enterprise Edition. Each Edition includes one Instance for production usage and an unlimited number of Instances for non-production use only (except where PTC is hosting the Licensed Products for Customer, in which case the entitlement is one non-production Instance unless additional hosted non-production environments are purchased). Each Edition includes a designated number of SCO Named Users, Assets, and Edition-specific features as set forth in the table in Note 2, below. Each Edition includes the "ThingWorx agents" or "Edge Microservers" and a ThingWorx SDK used by the Customer to add connectivity into the Customer's run-time applications. The "ThingWorx agents," "Edge Microservers," and Customer's applications created with a ThingWorx SDK are unlimited and may be used only with ThingWorx Assets. An "Instance" means a dedicated deployment of application servers and their individual persistence databases required for performance and availability to support assets at a unique customer site, facility or building, with at least one instance license required for each unique customer site, facility or building. For example, two sets of servers/databases used to support assets at two sites would require two instance licenses. A single server/database deployed to support assets for two sites would also require two instance licenses. However, two sets of servers/databases to support assets at a single site would require only one instance license.

(2) Each ThingWorx SCO Platform Edition comes with the entitlements specified in the table below:

	Premium Edition	Enterprise Edition
SCO Named Users (included, more may be purchased separately)	10	15
ThingWorx Analytics	Not available	16 cores included
ThingWorx Manufacturing Apps	Included	
eLearning (Registered Users)	1 license included with each SCO Named User	
ThingWorx Foundation	Included	Included
Technical Support	Gold	Gold
Software Content Management	Not available	Purchase separately.
ThingWorx Flow	Not available	Included
ThingWorx Active-Active Clustering	Included (9.0+)	Included (9.0+)

(3) The ThingWorx Manufacturing Apps and Accelerators (currently Asset Advisor, Controls Advisor, and the Manufacturing Accelerators, collectively the "Manufacturing Apps") are included in each edition subject to the SCO Named User limitations of the edition. Only Asset Advisor, which includes Controls Advisor can be purchased seperaely from an SCO Edition.

(4) "SCO Named User" (designated as "IoT") means a log-in ID that enables access to the ThingWorx Platform directly or via an intermediate application, regardless of whether such log-in ID is used by one unique person or is shared by multiple people.

(5) "ThingWorx Analytics" enables machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics may be licensed for use as specified in Note 2 above. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license. Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

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ThingWorx OEM Program

The ThingWorx OEM Program, and the OEM agreement signed by Partner (Customer), allows a Partner to build, host and distribute custom built solutions and applications using the ThingWorx Platform. Each unique OEM solution must be installed on a different ThingWorx Platform. The signed OEM agreement specifies the scope of use and distribution rights, and outlines how Partner's customers can access these solutions and applications. The licensing basis for each OEM Licensed Product is detailed in the table below:

Licensed Product Name	Licensing Basis
ThingWorx OEM Platform Edition (1)	OEM
OEM Named Users (2)	OEM
Assets (3)	OEM
ThingWorx Analytics (4)	Per Core (can only be purchased with the Enterprise Edition)
Software Content Management	License required for each Production Instance (as defined below in note 1 below)
OEM TWX Runtimelicense (5)	OEM
ThingWorx OEM Connected Site License (6)	OEM

(1) There are two different ThingWorx OEM Platform Editions: Premium Edition and Enterprise Edition. Each ThingWorx OEM Platform Edition includes one Instance for production usage and an unlimited number of Instances for non-production use only (except where PTC is hosting the Licensed Products for Customer, in which case the entitlement is one non-production Instance unless additional hosted non-production environments are purchased). Each ThingWorx OEM Platform Edition includes a designated number of Named Users and Assets for Partner's internal use for initial development, non-production use, and on-going maintenance and development of the solution or application. Each ThingWorx OEM Platform Edition also includes the ThingWorx OEM Platform Edition-specific features as set forth in the table below.

The ThingWorx OEM Platform can be installed at the Partner's physical premises or on the Partner's designated hosting provider, if not hosted by PTC. An "Instance" means a dedicated deployment of application servers, all of which are located in one physical location, and their individual persistence databases. Each ThingWorx OEM Platform Edition includes the "ThingWorx agents" or "Edge Microservers" and a ThingWorx SDK used by the Partner to add connectivity into their run-time applications. The "ThingWorx agents," "Edge Microservers," and Partner's applications created with a ThingWorx SDK are unlimited and distributable with connected products, but only for use with ThingWorx products.

	Premium Edition	Enterprise Edition
Included Assets (for development use only)	100	100
Included OEM Named Users (for development use only)	10	10
ThingWorx Analytics	Not Included	8 Cores included
Starter/Standard Success Plan	Included	Included
eLearning (Registered Users)	1 per User	1 per user
ThingWorx Foundation	Included	Included
Software Content Management	Not Available	Included
Technical Support	Gold	Gold+
ThingWorx Flow	Not Available	Included
ThingWorx Active-Active Clustering	Included (9.0+)	Included (9.0+)

(2) "OEM Named User" (designated as "IoT") for SCO Use Cases (as outlined under the "ThingWorx Smart Connected Operations" section) means a log-in ID that enables access to the ThingWorx Platform directly or via an intermediate application, regardless of whether such log-in ID is used by one unique person or is shared by multiple people. For non-SCO Use Cases each OEM Platform Edition includes an unlimited number of "View Only OEM Users". View Only OEM Users are users of the OEM Licensed Product that are authorized only to consume outputs from the ThingWorx Platform. These Users may not be authorized to, and must not, develop or modify mashups, applications or dashboards. View-Only OEM Users may have a log-in, or might be someone (e.g., a service desk employee) who accesses data through another system or through a shared log-in or screen.

(3) "Asset" (designated as "IoT") (also sometimes referred to in the product itself or elsewhere as a "Device" or a "Thing" or a "Remote Thing") means a sensor, device, machine, system, web service, etc. that is modeled (represented) and/or registered as an asset (or "device" or "thing" within the Licensed Product) or any separately defined part of the foregoing if it is being treated as a separate asset within the software. For example, without limitation, an Asset could be a brake press, industrial dryer, another computer system, or a set of individual components within those machines if modeled or registered as a separate asset in the software), etc.

> "Simple Narrow Band Asset" (NB) is a class of Asset (SCP section 3) that runs on either an industry standard Low Power Wide Area Network (LPWAN) or 5G network with the following additional constraints: No remote access from ThingWorx into the asset, No Software Content Management (SCM) capability, and no file transfer capability

(4) "ThingWorx Analytics" enables machine learning capabilities and other analytic services for the Internet of Things. ThingWorx Analytics may be licensed for use as specified in Note 2 above. ThingWorx Analytics is licensed on a Per Core basis. Analytics Server may be run in single-server or distributed mode. In distributed mode, only CPU cores running ThingWorx analytics code (e.g., API interface, analytics workers) require a Per Core license.

Any installed component that delivers analytic computational functionality as indicated in the table above requires a ThingWorx Analytics Per Core license for each physical or virtual CPU core as reported by the operating system on which such component is installed. If the Customer exceeds the compute capacity of the included ThingWorx Analytics cores, the Customer can purchase additional core licenses for additional compute capacity on any of instance running components that deliver computational functionality.

(5) "OEM TWX Runtime License" or Run-time license is a ThingWorx Platform license that enables a Partner to run their application or solution at an end user site (i.e., not hosted by Partner). The OEM Embedded License enables the Partner's application or solution to work remotely, but restricts any development on the ThingWorx platform by the end user.

(6) "ThingWorx OEM Connected Sites" is an additional "Per Site" fee, which includes an OEM TWX Runtime Licnesefor a Partner's hosted solution or application in SCO like Use Cases (as outlined under "ThingWorx Smart Connected Operations" section). This fee aligns the OEM Program with the SCO license model, in which a platform fee is charged for each end user site. The ThingWorx OEM Per Site Fee is in addition to applicable OEM Named User fees.

Other ThingWorx Products

ThingWorx Kepware Server (formerly ThingWorx Industrial Connectivity):

ThingWorx Kepware Manufacturing Suite
ThingWorx Kepware Servers (KEPServerEX) are sold on a Designated Computer basis. Certain drivers are included with the base license, and others must be purchased separately and are also licensed on a Designated Computer basis. The Customer may also purchase other Plug-in functionalities/features, which are also licensed on a Designated Computer basis.

ThingWorx Kepware Server for a Single Asset is sold and can only be connected to a single asset and may only use 1 Kepware driver.

ThingWorx Kepware Enterprise offering is a bundle of ThingWorx Kepware Servers that is sold per Site (see SCO). The number of servers is identified and determined by the license purchased. These servers come with an access to the full suite of Kepware drivers and plugins from the Kepware download page.

ThingWorx Kepware Edge license is needed for each Designated Computer (PLC) and is limited to the specified number of tags (which is essentially a data item) identified in the product description. The Kepware Edge license includes a connectivity layer that connects a single remote device or gateway to the ThingWorx SCP platform.

ThingWorx Machine Builder (MB) Bundle

The ThingWorx Machine Builder Bundle is a ThingWorx bundle that allows MB Customers to license the ThingWorx Platform for connecting the Customer's products and creating IoT applications that can be shared across the ecosystem. The licensing basis for each Licensed Product in the MB Bundle is detailed in the table below:

	MB Starter	MB Tier 1	MB Tier 2	MB Tier 3
Assets (included)	25	250	1000	2000
SCP Named Users	5	5	5	5
View-Only SCP Users	Included	Included	Included	Included
eLearning (Registered Users)	1 license included with each SCP Named User			
ThingWorx Premium	Included	Included	Included	Included
Technical Support	Gold+	Gold+	Gold+	Gold+
ThingWorx Analytics	Purchased separately	Purchased separately	Purchased separately	Purchased separately
Software Content Management	Purchased separately	Purchased separately	Purchased separately	Purchased separately
ThingWorx Flow	Included	Included	Included	Included
Asset Advisor	Included	Included	Included	Included
ThingWorx Kepware Edge SaaS Only	25	250	1000	2000
Vuforia Chalk (5 User) Hosted	Included	Included	Included	Included

ThingWorx Navigate

The licensing basis for ThingWorx Navigate View, ThingWorx Navigate Contribute, ThingWorx Connected PLM and ThingWorx Connected PLM View is Registered User or Active Daily User or Designated Computer, as specified in the Quote.

"Active Daily User" means that the product is licensed on the basis of the number of unique users who access a ThingWorx Navigate application at any time during a 24 hour calendar day. For example, if a user accesses a ThingWorx Navigate application 3 times on a Monday and 2 times on the following Friday, then the user is counted as an active user for Monday and Friday only. The 24 hour period is defined using the time zone set for the connected ThingWorx server.

Customers using ThingWorx Navigate licenses with Windchill products must associate all user and groups entitled to use the Navigate licenses with the Windchill License associated with the license. For example, all users for whom a ThingWorx Navigate View license is purchased must be a member of a group associated with a PTC View and Print Only License Profile.

The ThingWorx Navigate View license grants the Customer the right:

1. to view information through the components bundled with the ThingWorx Navigate View apps.
2. to install the ThingWorx server for the sole purpose of delivering ThingWorx Navigate components. The application components include only the gadgets, widgets, shapes and templates bundled with the ThingWorx Navigate apps.
3. to use the ThingWorx Composer and administration capabilities of ThingWorx to configure the application components (Widgets, shapes and templates) bundled with the ThingWorx Navigate apps, specific to the included ThingWorx Navigate View apps.
4. to directly log into the Windchill application with view privileges limited to the following basic Windchill capabilities:
   a. ability to perform full-text searches using the Windchill search engine to locate Windchill managed objects via matches against keywords found in metadata and content data
   b. the ability to perform database searches to locate Windchill managed objects via matches against metadata
   c. the ability to traverse cabinet/folder information classification structures to find Windchill-managed objects
   d. for any managed object found via any of the foregoing methods, the ability to view a "Properties" page that outlines metadata properties of the Windchill-managed object and provides the ability to download non-CAD file content should any content exist as part of the object
   e. the ability to print objects
   f. the ability to open viewables in Creo View and to view and measure the viewables in 3D but not to mark up the viewables

Customer may not use any functionality not included in the list above. For the sake of clarity, without limitation, the ThingWorx Navigate View license specifically does not authorize Customer:
1. to create information in solutions sold by PTC.
2. to use the ThingWorx platform integration capability to:
   a. export information from one PTC solution to another system (including a file system)
   b. acquire information from non-PTC solutions (a separate ThingWorx Connected PLM license is required for this purpose)
   c. create or edit information in a system
   d. build integrations with systems that require components other than those bundled with the ThingWorx Navigate apps.
3. to use the ThingWorx platform to create new components (gadgets, widgets, shapes or templates) in addition to those bundled with the ThingWorx Navigate apps.
4. to use the ThingWorx platform to create new applications that include components (widgets, shapes and templates) other than those bundled with the ThingWorx Navigate apps.
5. to directly access ThingWorx or the PTC Solution Extension layers which are used by the ThingWorx Navigate apps to communicate with solutions sold by PTC.
6. to use the ThingWorx platform to create applications that directly or indirectly acquire information from and/or control physical Assets (for example, physical devices, equipment, and products). A separate ThingWorx Platform license is required to develop applications for physical asset connectivity
7. to use the following Windchill capabilities:
   a. the ability to participate in workflows and lifecycle action items
   b. the ability to upload content files or to modify metadata in any fashion
   c. the ability to create or modify data

ThingWorx Navigate Contribute

This license supports all the capabilities included under a ThingWorx Navigate View license as well as those exposed in the PTC Contribute License Profile.

ThingWorx Connected PLM

This license entitles a user to use the ThingWorx Composer and ThingWorx Mashup Builder to create custom apps and connect to PTC and third party enterprise systems to both view as well as to create and update information in the connected systems. Each user of the custom app must have the requisite view, create and update privileges to the content of connected systemthat is exposed in the custom authoring app. For example, each user who uses a custom Navigate app that is connected to Windchill must have this license in addition to a base ThingWorx Navigate View or Contribute license (or Windchill or Integrity base license), depending upon the capabilities of the custom app.

The ThingWorx Connected PLM license may be used by Customer to connect toenterprise systems (e.g., Oracle ERP, SAP, CRM systems, etc.) and to connect to PTC's Windchill and Integrity products. It may not be used to access data from devices – which can include but is not limited to connected products, wearables, production machinery, and physical assets – and any edge servers or services that devices are connected to. It also may not be used to connect to manufacturing systems, processes, and/or operations belonging to the Customer's internal production facilities or the production facilities of the Customer's suppliers. ThingWorx Connected PLM has a prerequisite of one Connected PLM Base per ThingWorx server instance.

Vuforia Products

Vuforia Studio

There are different Vuforia Studio bundles: Starter, Basic, Premium, Professional and Enterprise. Each bundle includes the Vuforia Studio Experience Creator, the Experience Service (licensed on a Designated Server basis), Views and the Vuforia View Application with Bundle-specific features as set forth in the table below.Vuforia Studio licenses allow Customer to access and use the ThingWorx platform for user administration purposes only; any additional use cases require purchase of a ThingWorx IoT platform edition. Where the Customer engages PTC to host Vuforia Studio for the Customer, PTC's hosting will be governed by the Cloud/SaaS Service Terms and Conditions set forth at http://www.ptc.com/legal-agreements.

Definition of "View"
A "View" (also referred to as an "Experience" or "EXP") is a presentation of a mix of textual, numeric and 3D data that is presented to a user by the Vuforia View application. The View may include augmented reality interaction and/or "live" data from Things via ThingWorx. A View has a definite "entry point" which is invoked via a user action to select the View. This may be by selecting a "bookmarked" experience, following a scan of a ThingMark, or scanning a designated QR code. There is no definite "exit point" other than exiting Vuforia View or requesting another View. Invoking the same View within 15 minutes will count as a single View. Examples of Views include, without limitation:

- A service experience to instruct a service technician how to perform a service procedure
- A marketing experience to present capabilities of a product to consumers
- A monitoring experience to display live data streaming from a machine

Bundles

Each Vuforia Studio Bundle comes with the entitlements specified in the table below:

	Starter	Basic	Premium	Professional	Enterprise
Registered Users (included, more may be purchased separately)	20	100	200	1,000	10,000
Annual Views (for non-Registered Users)	2,500	5,000	10,000	50,000	100,000

Registered Users
Customers may purchase additional Registered Users for users who will author and/or consume Views. There is no limit on the number of Views that may be consumed by Registered Users. Registered User licenses must be issued to persons accessing the A/R experiences who are either (i) employees or contractors of or otherwise engaged by the Customer or (ii) who receive login accounts/passwords to the Customer's Studio instance.

Non-Registered Users
Customers may purchase additional public Views for consumption by individuals who are not Registered Users (up to the number of Views purchased).

Vuforia Engine

PTC has five licensing models for Vuforia Engine: (i) Consumer license (for Consumer Applications), (ii) Employee license (for Employee Applications), (iii) the Vuforia Innovator Program (VIP), (iv) Basic license, and (v) Basic + Cloud license. Each of these licensing models is described below. Additional features identified below may be purchased separately for Consumer and Employee licenses.

Licensed Product Name	Licensing Basis
Vuforia Engine – Consumer Application (1)	Per Region (PR)
Vuforia Engine – Employee Application (2)	Device Initializations (DI) (3)
Vuforia Engine Basic License (4)	Per Application
Vuforia Engine Basic + Cloud License (4)	Package

Vuforia Engine-Multiple License Package	Package
Vuforia Innovator Program	N/A

(1) "Consumer Application" means a Customer Application that is developed by Customer using the Vuforia Engine product and distributed to consumers by Customer through a public app store. All current and future versions of a Consumer Application across all operating systems (e.g. Android, iOS, Universal Windows Platform etc.) and device types that have the same name (or a minor variation of the name) and substantially similar functionality shall be considered a single Consumer Application. Consumer Applications may be deployed in the number of regions included in the offering (as specified below), plus the number of additional regions purchased.

(2) "Employee Application" means a Customer Application that is (i) developed for Customer's own internal business purposes and distributed solely for internal use by Customer Personnel; or (ii) developed by Customer to be used by third-party Personnel solely with Customer products in a business or industrial environment; or (iii) developed by a Third-Party Provider for a Client's internal use by Client Personnel. Examples of Employee Applications may include Customer Applications that are used to (a) operate and service Customer products and equipment, (b) market and sell Customer products, or (c) train Customer Personnel.

(3) A Device Initialization (DI) is an initialization of the Vuforia Engine product from the Customer Application on a monthly basis. A Consumer Application that is removed or re-installed, and that subsequently performs another Vuforia Engine session in the same month shall be counted as two Device Initializations. A Customer Application that is updated without being removed in the same month shall be counted as a single Device Initialization.

(4) A Basic License is a type of license purchased for a Consumer Application that is only available to Customers who have under ten million dollars ($10,000,000) in annual revenue and is licensed on a per application basis (e.g each application deployed requires a license). The Basic + Cloud License includes the Cloud Recognition Service (as detailed below).

For Consumer Application licenses, the additional features below are sold on a per Application basis. For Employee Applications, the below additional features are aggregated cross all Employee Applications.
Cloud Recognition Service (includes quantity of Cloud Recos and Cloud Targets based on the level purchased, as specified in the Quote). Customer will be required to pay any applicable overage fees monthly in arrears.
Model Targets (MDT) - Model Targets (MDT) are Targets created from 3D models. Model Targets may only be used with the Customer Application for which it was purchased, as specified in the Quote. Model Targets are included in the Consumer Application, Enterprise Edition.
Additional Device Initializations
Additional Regions • Americas • Europe (except Central Europe Region), Middle East, India & Africa • Central Europe Region (includes Austria, Germany, Liechtenstein, & Switzerland) • Japan • China (includes Hong Kong, Macau, and Taiwan) • Rest of APAC

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<u>Consumer Application</u>

Each Consumer Application Edition includes the entitlements specified in the table below:

Entitlements	Standard Edition (1)	Enterprise Edition
Number of Applications	1	1
Model Targets	Not Included	Included
Device Initializations	Unlimited	Unlimited
Regions	Unlimited	1

(1) The Standard Edition is only available to Customers and/or (if Customer is a Third Party Provider) Clients with annual revenues under USD $1 billion (including Customer's/Client's parent companies).

Restrictions: A Consumer Application shall not be used by Personnel or Client Personnel except where the full functionality of the Consumer Application is also made publicly available for free.

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Employee Application

Each Employee Application License includes the entitlements specified in the table below:

Entitlements	Employee Application
Number of Applications	Unlimited
Model Targets	Not Included
Device Initializations	20
Regions	Unlimited

Restrictions:

1. Customer is permitted to distribute Employee Applications only to Personnel, except in the case where Customer is acting as a Third Party Provider, then Customer may also distribute the Employee Applications to Client Personnel, provided that Customer has written and binding agreements with the Client that requires Client's compliance with the terms and conditions of the License Agreement.

2. Customer will be solely responsible for (i) determining the use and access of Employee Application(s) by Personnel and, in the case of a Third-Party Provider, Client Personnel, and (ii) managing and monitoring Personnel and Client Personnel's use of and access to such Employee Application and mobile devices on an ongoing basis. In the event that Customer exceeds the quantity of DIs purchased in any given month, then Customer shall be required to purchase additional DIs to be coterminous with the then-current subscription term This includes, without limitation, responsibility for promptly retrieving mobile devices owned or controlled by Customer or Client from, and terminating access to the Employee Application by, individuals who are no longer employed or engaged by Customer or Client.

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Basic and Basic + Cloud License

Each Basic and Basic + Cloud License includes the entitlements specified in the table below:

Entitlements	Basic & Basic + Cloud (1)
Number of Applications	1
Model Targets	Not Included or available for purchase
Device Initializations	Unlimited
Regions	Unlimited

(1) Basic +Cloud includes the Cloud Recognition Service (as detailed above)

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Vuforia Engine- Multiple License Package

Entitlements	Multiple License Package (1)
Number of Applications	Unlimited
Model Targets	Not Included
Device Initializations	Unlimited
Regions	Unlimited

(1) Up to 5 applications may be deployed at any one time for a period of up to 6 months each. After 6 months, Customer must remove the application(s) from all app stores, both public and internal and Customer shall not permit any further access to such applications. PTC shall have the right to shut off the Licensed Product if Customer does not remove the application from the app store after 6 months.

Vuforia Innovator Program (VIP)

The VIP includes the entitlements specified in the below table:

Entitlements	Use	Limitations
Pre-Release Software	If Pre-Release Software is made available to Customer under the VIP, such Pre-Release Software shall not be distributed with Customer Applications unless agreed to by PTC in writing. If PTC does consent to the Pre-Release Software for distribution with Customer Applications, then when a subsequent commercial New Release is made available that includes the features of the Pre-Release Software version utilized in the Customer Application, Customer must update the Customer Application with the commercial New Release of the Licensed Product within ninety (90) days of availability of such New Release.	Customer acknowledges and understands that: (i) PTC has not released the Pre-Release Software for general distribution or sale; (ii) the Pre-Release Software may contain errors, omissions, inaccuracies or the like; (iii) PTC has not completed its testing and quality assurance on the Pre-Release Software; (iv) the Pre-Release Software may not be compatible with any existing or future commercial release versions of the Licensed Product; (v) PTC is under no obligation to and may never commercially release the Pre-Release Software or other software containing functionality contained in the Pre-Release Software; and (vi) PTC is under no obligation to support Pre-Release Software.
Pilot Applications (1)	PTC will provide Customer with a license key for use with Pilot Applications. PTC will assign a license key to Customer's Vuforia Developer Portal account. Subject to the terms and conditions herein, Customer may use Pre-Release Software for Pilot Applications.	Customer may use each Pilot Application (including any related versions) for up to six (6) months. After using a Pilot Application for six (6) months, Customer must purchase an applicable commercial license in order to continue use of the Pilot Application. Customer may not distribute Pilot Applications on a public application store (including but not limited to the Apple App Store and Google Play). Customer may distribute Pilot Applications to Personnel, but in no event shall Customer distribute Pilot Applications to third parties. Notwithstanding the foregoing, if Customer is acting as a Third-Party Provider, Customer may distribute a Pilot Application to Client Personnel; provided Customer has written and binding agreements with such Client that requires compliance with the terms and conditions of the License Agreement.
Model Targets	For use with development licenses and Pilot Applications	Unlimited number of Model Targets to be used with Pilot Applications and development licenses.

Customer may not allow or enable anyone other than Personnel to access any of the entitlements of the VIP.

(1) **"**Pilot Application" means a Customer Application that is used by Customer Personnel and/or Client Personnel exclusively for evaluation purposes or for a Trade Show **(2).** Notwithstanding anything to the contrary, a Pilot Application shall not include Consumer Applications intended for distribution to a Client.

(2) "Trade Show" means an event where the Pilot Application is used by Personnel solely for sales and marking purposes.

Training Products

PTC University Learn Online Subscriptions

- PTC University Learn licenses are licensed on a Registered User basis (also referred to as "Named User"), which means that the license can only be used by one person on a password-restricted basis. Password sharing is not permitted.
- Licenses cannot be reassigned except: (i) at the end of each contract year, or (ii) where the Registered User is no longer a Customer employee or transfers to a role that does not require the person to use PTC software.
- PTC University reserves the right to add, delete, and modify courses in any Learn offering at any time.
- Learn is an auto-renewing subscription license, billed annually in advance.

eLearning Subscriptions in Precision LMS and Training Central

- All eLearning is licensed by active monthly users. An "active monthly user" is any user who accesses the LMS platform within a calendar month.
- PTC University reserves the right to add, delete, and modify courses in the eLearning Subscription at any time.
- Any monthly overages will result in a license increase and invoice for the remaining term of the subscription.
- Content created using Customized eLearning licenses is the property of PTC.

Education/Intern Products

The following Licensed Products may only be used for educational purposes; use for other purposes, in particular for commercial or productive purposes or by regular personnel of Customer, is not permitted and represents a violation of the terms of the License Agreement.

Education/Academic Licenses

If the Licensed Product is identified as "University Plus," "Priced for Education," "Professor's Edition/Version," "Academic Edition/Version," "Classroom," or "Student" or if the name otherwise indicates that it is intended for academic or education purposes, Customer must be enrolled in or employed by an academic institution and must use the Licensed Product solely for educational purpose. If Customer does not meet one of these qualifications, Customer has no right to use such Licensed Products. Without limitation, non-educational research or funded educational research conducted using the facilities of an academic institution or under an academic name does not qualify as "educational purposes" and use of educational software for such purposes and represents a violation of the terms of the License Agreement.

For any educational "site license", such license will be limited to the following number of seats: University – 500; Schools Advanced (Europe Only) – 35; Schools Edition – 300; Windchill – 100 Registered Users. A Schools Edition Site License will automatically terminate if the Customer ceases to have on staff a PTC certified trained teacher with up-to-date credentials (as may be established by PTC from time to time) in the use of the Licensed Product. Customer agrees that it shall require each student to whom the Customer provides a Schools Edition license to sign PTC's then-current Student License Agreement form, and the Customer will provide copies of such agreements to PTC upon request.

Research License

If the Licensed Product is identified as "Research", despite anything to the contrary in the License Agreement, Customer must be a college, university, university-owned research lab or center, or teaching hospital and may only use the Licensed Products for research purposes. In no event shall the Licensed Products be used for commercial purposes, including but not limited to the sale of intellectual property rights generated by the research or the creation of training materials for resale using the Licensed Products.

Intern/Apprentice Licenses

If the Licensed Product is identified as "Intern" or "Apprentice" or if the name otherwise indicates that it is intended for use by interns or apprentices, the Customer shall limit the use of the Licensed Product solely for training of interns or apprentices of Customer (i.e., temporary personnel who are still engaged in a course of study but working at Customer in order to gain practical experience in their field of study). Such training may only be conducted by employees of Customer, and not by employees of any third parties.

Examples	Academic License	Research License	Internship License	Commercial License
K – 12 Projects, Undergraduate research projects (*)	X			
Student enrolled in K-12 program or university/college (*)	X			
Graduate student research projects – non-funded	X			
Curriculum development (for internal use only)	X			
Undergraduate research projects – paid or generating IP		X		
Publication of research results in open source platforms		X		
University owned research lab/center		X		
Graduate student projects – funded with deliverables (IP remains property of university)		X		
Curriculum development – open source sharing		X		
Academic non-profits or consortiums		X		
Teaching Hospital			X	
Commercial enterprise uses employees to train undergraduate or graduate interns			X	
Commercial enterprise uses interns to develop commercial IP				X
National Laboratories				X
Start-up commercial enterprises				X
Individual consulting				X
Curriculum development for resale				X

(*) In countries where K-12 is not applicable, references to it above mean primary and secondary education.

<u>Online Supported Training</u>

Online Supported Training is an offering that entitles one Registered User access to the purchased online content for one year. In addition, the following terms apply: (a) registered user log-in IDs and passwords shall not be shared, (b) support questions will originate from the registered user and pertain to the training content only, and (c) the training materials may not be copied or shared.